

Professional DC Electric Powered Lawn Care Products

By:

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For:

ARB Off-Road Mobile Source

Technology Review



Design Requirements

- Safe
- Zero Emissions
- Quiet
- Professional
- Durable
- Portable
- Adaptable
- Comfortable
- Light Weight
- Powerful
- Long Running per Charge
- Variable Speed
- Cost Effective





**Computer Controlled
NiMH Cartridge Battery**

**Left or Right Hand
Application**





**Comfortable
Carrying Frame**

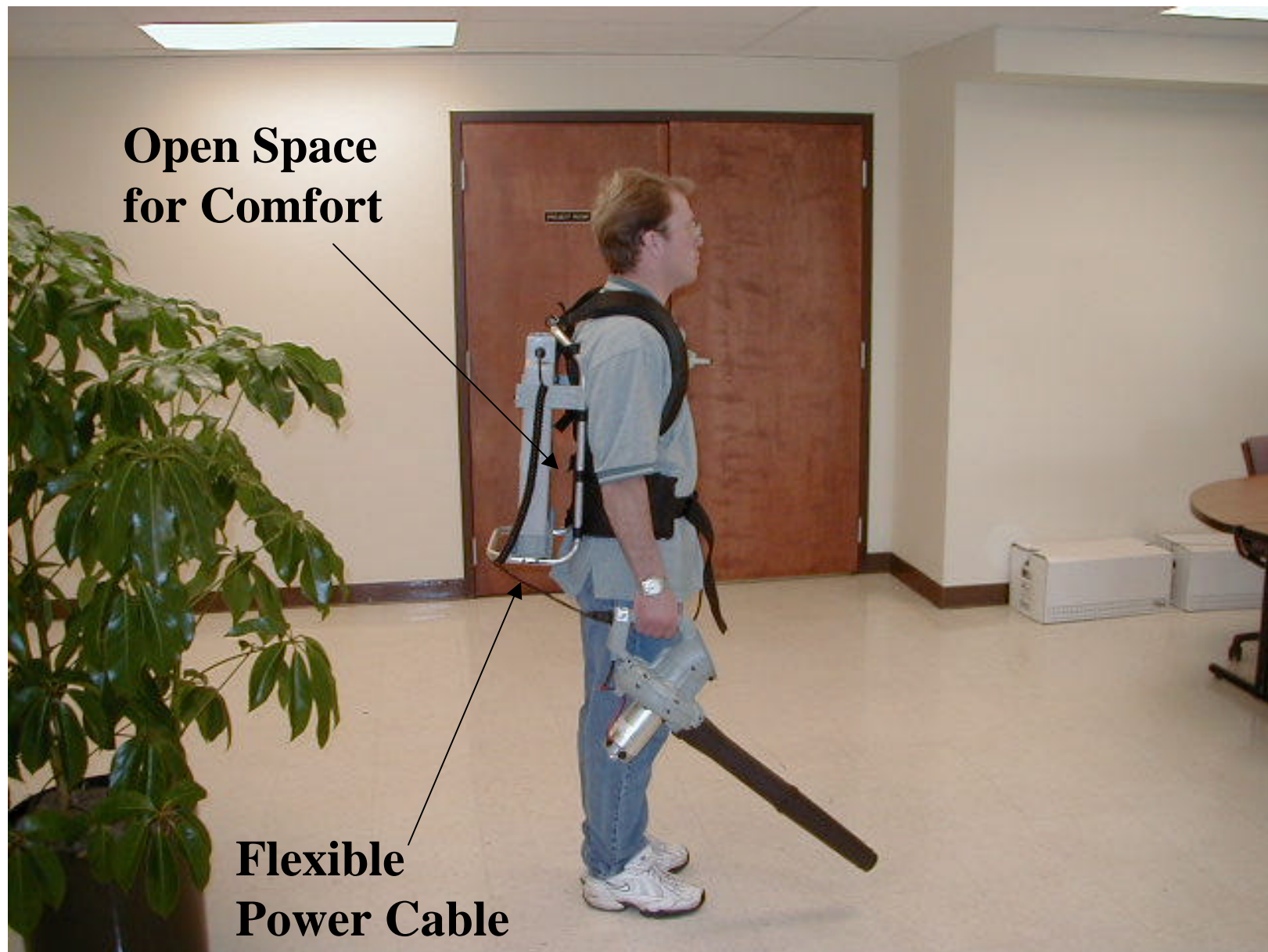




**Shoulder Straps for
Stability**

**Weight Carried on
Hips**





Hand Held Blower



56 dB(A) per ANSI B 175.2





Stick Tool Power Head





Hedge
Clipper

Power
Pruner

String
Trimmer

Articulating
Hedge Clipper

Stick
Edger

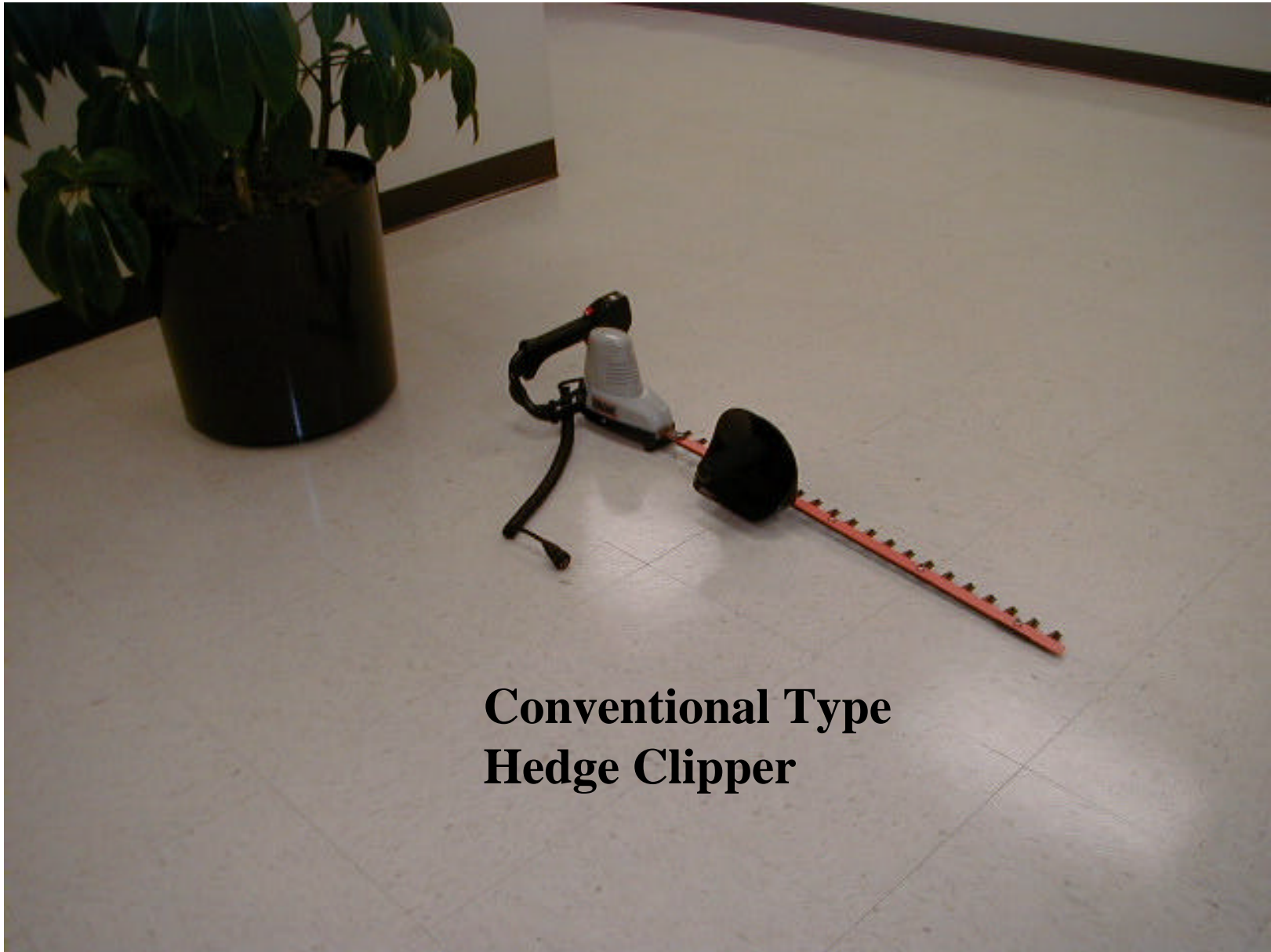




Dethatcher
Hedge Clipper
Power Pruner
String Trimmer
Broom
Tiller
Edger

Pro Attachment Series (PAS)





**Conventional Type
Hedge Clipper**



Status of Development

- Preliminary testing complete
- Second generation prototype complete
- Temporary tooling complete
- Market research study complete
- Not released for production
- No production tooling



Challenges and Concerns

- No clear path to market identified
- Battery cost too high
- High tooling cost, small market size
- Poor return on investment





Echo Incorporated